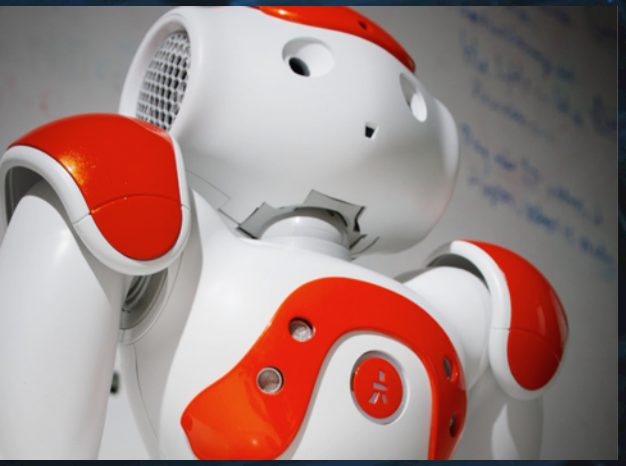
Education to Employment: Designing a System that Works



Workforce 2020 Forum
April 2014

G. P. “Bud” Peterson
President, Georgia Institute of Technology

Georgia Institute of Technology

Expectations are changing

Today, institutions of higher learning are expected to:

- Ensure that graduates are both employable and prepared to adapt and lead in an ever-changing world that many times requires an interdisciplinary approach to developing solutions to grand challenges.
- Move our research from the bench top to the consumer quickly in order to enhance economic development of the region and nation to create more jobs.
- Be global in nature and to provide lifelong learning opportunities for the world using advanced technology.

Characteristics of 3 Generations

Boomer

- 1945-1964
- Face-to-Face or Call
- Loyal to Job
- Print Me a Copy
- Respect My Title
- Focus on Process
- Work Comes First

GenX

- 1964-1980
- Email or IM
- Work to Live
- Send Me the Data
- Respect My Ideas
- Focus on Results
- Family Comes First

Millennial

- 1980-2000
- Just Text Me
- Play then Work
- I'll Google It Myself
- Respect My Skills
- Focus on Involvement
- Friends Come First
- Confident
- Open to Change
- Connected

Thomas Friedman – in 2004

Facebook didn't exist

Twitter was still a sound

The cloud was in the sky

4-G was a parking place

Linked in was a prison

Applications were what you sent to college

Big Data was a rap star, and

Skype was a typo

Georgia Tech Students

- **Enrollment – 21,500 Students**
  - From 115 countries
- **Fall 2013 Freshman Class**
  - Largest, best-qualified, and most diverse in Georgia Tech history
- **Fall 2014 Class**
  - 23% international applicants
  - Admitted students from 87 countries
  - 25,500 applications for 2,400 slots
  - Admission decision is based on a combination of academic excellence and leadership activities

The Georgia Tech Campus

Clough Commons — Resources for Library Project Collaborative Learning and Engagement

Strategic Plan Goals

Goal 1: Be Among the Most Highly Respected Technology-Focused Learning Institutions in the World

Goal 2: Sustain and Enhance Excellence in Scholarship and Research

Goal 3: Ensure That Innovation, Entrepreneurship, and Public Service are Fundamental Characteristics of Our Graduates

Goal 4: Expand Our Global Footprint and Influence to Ensure That We Are Graduating Good Global Citizens

Goal 5: Relentlessly Pursue Institutional Effectiveness

Tech's Global Focus

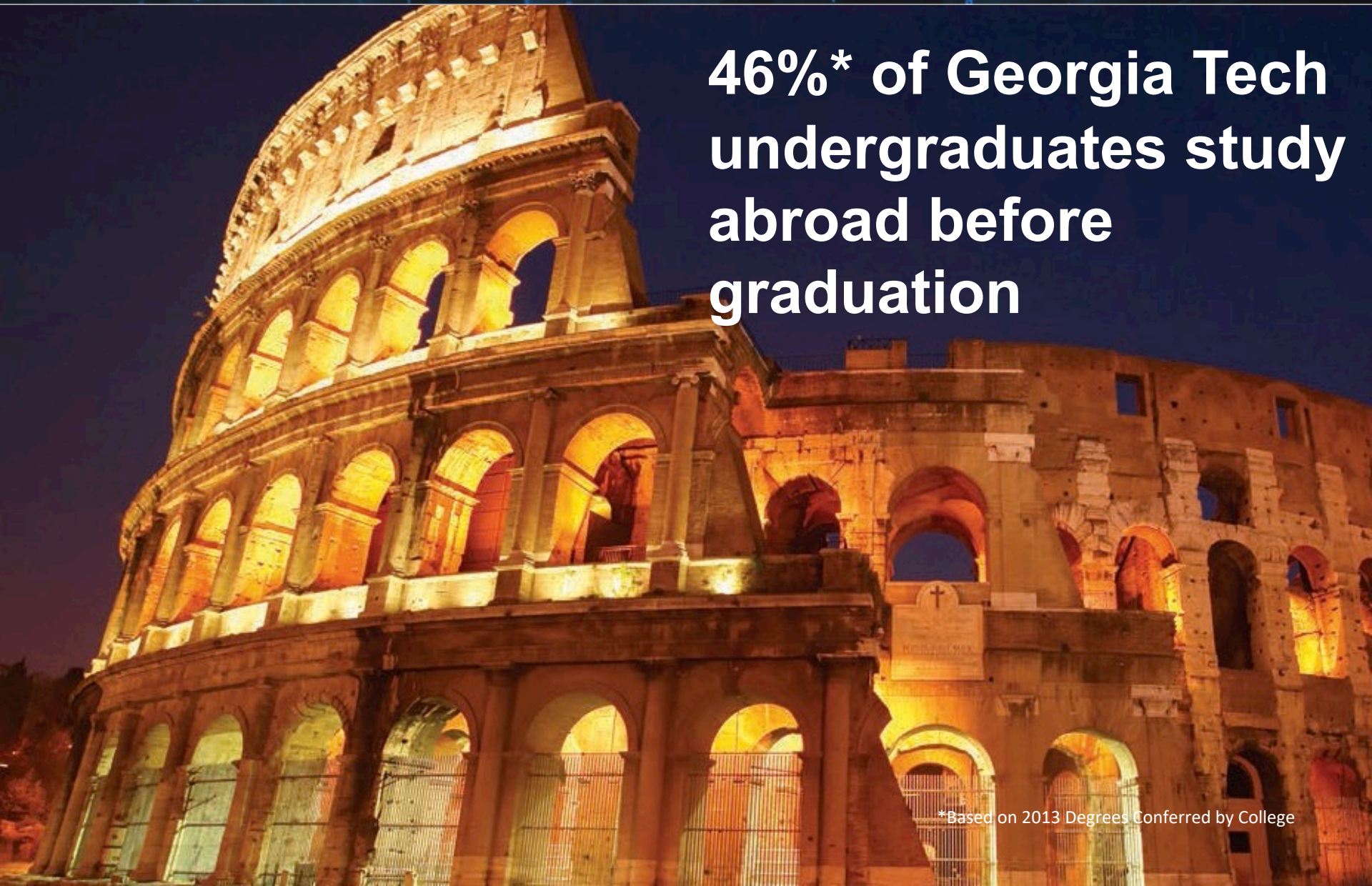
- Global Strategy:
  - Expanding the world's footprint at Tech
  - Expanding and leveraging Georgia Tech's impact around the globe
  - Embracing and supporting globally engaged students

Georgia Tech has grown into one of the most globalized universities in the world,

with partnerships in more than 30 countries a campus in France and global centers in

- China
- Singapore
- Costa Rica
- Panama

A Global Education



46%* of Georgia Tech undergraduates study abroad before graduation

*Based on 2013 Degrees Conferred by College

Focus on Student Innovation

Capstone Design

Invention Studio

Smart Grid Challenge

Convergence Challenge

6th InVenture Prize March 26

- 560 students in 2014
- 2,400 in 6 years
- 1st Prize:
  - $20,000
  - free licensing
  - Flashpoint

Revitalizing Undergraduate Education

- Center for 21st Century Universities
- Embracing new technology and teaching methods
- “flipped” classroom
- Service learning
- X Degree
- Vertically integrated projects that foster innovative thinking and entrepreneurial behavior

- Preparing leaders by integrating liberal arts into our curriculum, student life, research, community outreach
- Significant contribution to the multi-disciplinary research and innovation that considers the human and social dimension of problem solving
- Bridges humanities, social sciences, and technical disciplines

Student Leadership Opportunities

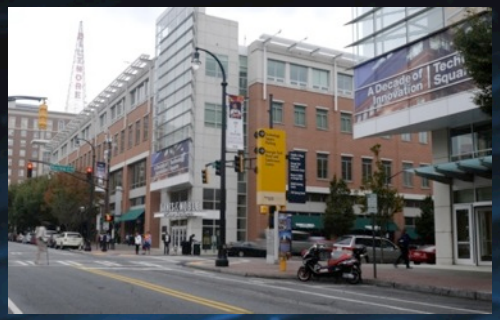
400 student organizations

ORGT engaged more than **5,000 students**

Grand Challenges Living Learning Community

Leading Edge

Celebrating A Decade of Innovation at Tech Square

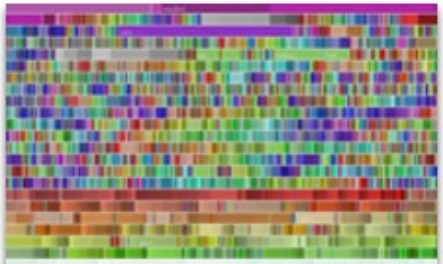


Innovation Ecosystem

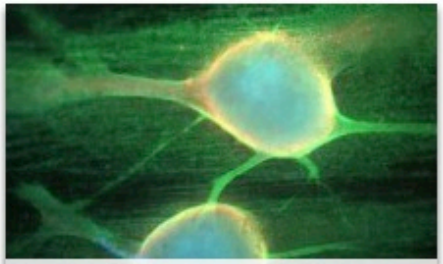
Innovation Centers in Tech Square:

- AT&T Foundry
- Panasonic
- ThyssenKrupp

12 Core Research Areas



Big Data

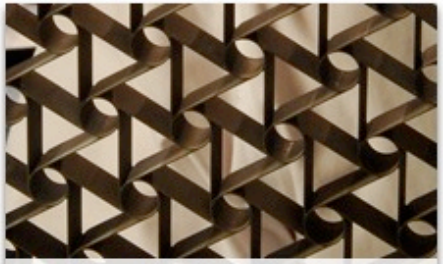


Bioengineering and Bioscience

Electronics and Nanotechnology

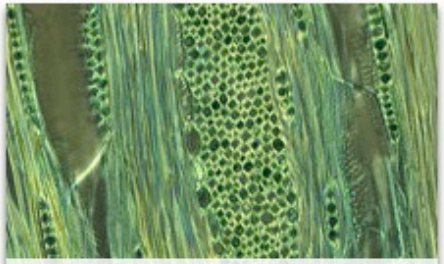
Energy and Sustainable Infrastructure

Manufacturing, Trade, and Logistics

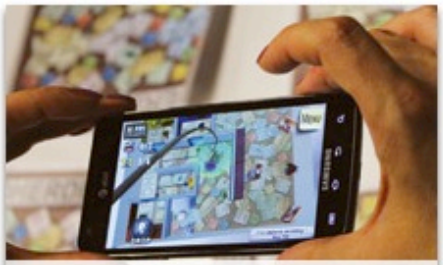


Materials

National Security



Paper Science and Technology



People and Technology

Public Service, Leadership, and Policy

Robotics

Systems

Online Master's in Computer Science

- OMS-CS
- 380 students this semester
- 2,360 applicants
- Partnership with Udacity and AT&T

"All the News That's Fit to Print"

The New York Times

National Edition

South: Mostly cloudy. A couple of showers and thunderstorms. Highs middle 70s through the 80s. Mostly cloudy tonight. A shower or thunderstorm. Weather map, Page 16.

VOL. CLXII . . . No. 56,232 © 2013 The New York Times SUNDAY, AUGUST 18, 2013 Printed in Georgia $6.00

Master's Program Is a New Frontier In Studying Online

From Page 1

expects that in the coming years, the program could attract up to 10,000 students annually, many from outside the United States and some who would not complete the full master's degree. "Online, there's no visa problem," he said.

The program rests on an unusual partnership forged by Dr. Galil and Sebastian Thrun, a founder of Udacity, a Silicon Valley provider of the open online courses.

Although it is just one degree at one university, the prospect of a prestigious low-cost degree program has generated great interest. Some educators think the leap from individual noncredit courses to full degree programs could signal the next phase in the evolution of MOOCs — and bring real change to higher education.

"Perhaps Zvi Galil and Sebastian Thrun will prove to be the Wright brothers of MOOCs," said S. James Gates Jr., a University of Maryland physicist who serves on President Obama's Council of Advisors on Science and Technology. "This is the first deliberate and thoughtful attempt to apply education technology to bringing instruction to scale. It could be epoch-making. If it really works, it could begin the process of lowering the cost of education, and lowering barriers for millions of Americans."

The plan is for Georgia Tech to provide the content and professors and to get 60 percent of the revenue, and for Udacity to offer the computer platform, provide course assistants and receive the other 40 percent. The projected budget for the test run starting in

VIRTUAL U
Higher Ambitions

Articles in this series are examining free online college-level classes and how they are transforming higher education.

ONLINE: Previous articles in the series:
nytimes.com/education

Not everyone believes that such a degree program will be sustainable, or that it would even be a step forward.

"The whole MOOC mania has got everyone buzzing in academia, but scaling is a great challenge," said Bruce Chaloux, the executive director of the Sloan Consortium, an advocacy group for online education. "I have to believe that at some point, when the underwriting ends, to keep high quality, Georgia Tech would have to float to more traditional tuition rates."

Some faculty members worry that despite Dr. Galil's pledge that the program will match the quality and standards of the on-campus master's program, it could dilute the value of a Georgia Tech degree. And as in California, where Udacity has worked with San Jose State University to offer three basic math courses — now paused because of underwhelming student performance — some object to the idea of outsourcing part of their work to a for-profit company like Udacity.

"If you spend a lot of money, you can make online great, and this will probably be a showcase

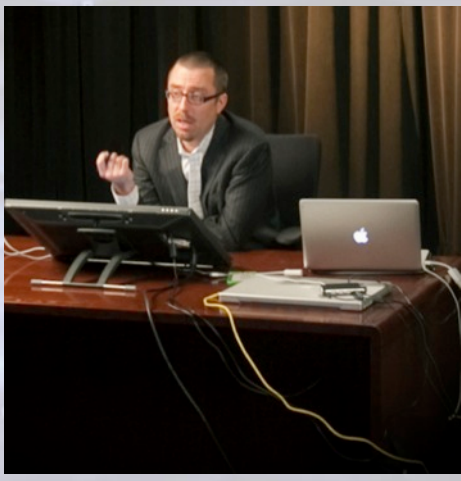
Zvi Galil, the dean of the College of Computing at the Georgia Institute of Technology. The institute plans to offer a master's degree in computer science through massive open online courses, or MOOCs.

Sebastian Thrun, a founder of Udacity, a Silicon Valley MOOC provider. He and Dr. Galil have teamed up to offer the online degree, which will cost students $6,600, far less than the $45,000 that it would on campus.

- Part of Tech's commitment to exploring new approaches to education and incorporating innovative technologies into the curriculum

Providing Lifelong Learning Opportunities Using Advanced Technology

- **In 2013, Georgia Tech Professional Education programs served**
  - 26,000 individuals
  - from 111 countries
  - representing 3,000 companies
  - Ranging in age from 13 to 91



- **Leadership in Massive Open Online Courses**

Discussion